

[illegible]

```

FFFFFFFFF  000000  RRRRRRRR  DDDDDDDD  EEEEEEEEE  CCCCCCCC  000000  MM  MM  000000
FFFFFFFFF  000000  RRRRRRRR  DDDDDDDD  EEEEEEEEE  CCCCCCCC  000000  MM  MM  000000
FF          00      00  RR      RR  DD      DD  EE          CC          00      00  MMMM  MMMM  00      00
FF          00      00  RR      RR  DD      DD  EE          CC          00      00  MMMM  MMMM  00      00
FF          00      00  RR      RR  DD      DD  EE          CC          00      00  MM  MM  00      00
FF          00      00  RRRRRRRR  DD      DD  EEEEEEEE  CC          00      00  MM  MM  00      00
FFFFFFFFF  00      00  RRRRRRRR  DD      DD  EEEEEEEE  CC          00      00  MM  MM  00      00
FFFFFFFFF  00      00  RR      RR  DD      DD  EE          CC          00      00  MM  MM  00      00
FF          00      00  RR      RR  DD      DD  EE          CC          00      00  MM  MM  00      00
FF          00      00  RR      RR  DD      DD  EE          CC          00      00  MM  MM  00      00
FF          00      00  RR      RR  DD      DD  EE          CC          00      00  MM  MM  00      00
FF          00      00  RR      RR  DD      DD  EE          CC          00      00  MM  MM  00      00
FF          00      00  RR      RR  DD      DD  EE          CC          00      00  MM  MM  00      00
FF          00      00  RR      RR  DD      DD  EE          CC          00      00  MM  MM  00      00
FF          000000  RR      RR  DDDDDDDD  EEEEEEEEE  CCCCCCCC  000000  MM  MM  000000
FF          000000  RR      RR  DDDDDDDD  EEEEEEEEE  CCCCCCCC  000000  MM  MM  000000

LL          IIIIII  SSSSSSSS
LL          IIIIII  SSSSSSSS
LL          II      SS
LL          II      SS
LL          II      SS
LL          II      SS
LL          II      SSSSSS
LL          II      SSSSSS
LL          II      SS
LL          II      SS
LL          II      SS
LL          II      SS
LLLLLLLLLLL IIIIII  SSSSSSSS
LLLLLLLLLLL IIIIII  SSSSSSSS

```



(2) 56  
(3) 85  
(4) 133

HISTORY ; Detailed Current Edit History  
DECLARATIONS  
FOR\$DECODE\_MO - DECODE OBJECT-FORMATTED

```
0000 1 .TITLE FOR$DECODE_MO - entry point for FORTRAN DECODE OBJECT-FORMATTED
0000 2 .IDENT /1-011/ File: FORDECOMO.MAR Edit: JAW1011
0000 3
0000 4 *****
0000 5
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0000 23
0000 24
0000 25 *****
0000 26
0000 27
0000 28 ++
0000 29 FACILITY: FORTRAN Support Library - user callable
0000 30
0000 31 ABSTRACT:
0000 32
0000 33 This module contains the entry point for the FORTRAN
0000 34 DECODE OBJECT-FORMATTED I/O statement. It is simply
0000 35 a call to FOR$$IO_BEG with bits in R0 which describe the
0000 36 parameter list. FOR$$IO_BEG interprets the parameters.
0000 37
0000 38 MAINTENANCE NOTE:
0000 39 The transfer vector (RTLVECTOR+ALLGBL) must have the following:
0000 40
0000 41 .TRANSFER FOR$DECODE_MO
0000 42 .MASK FOR$$IO_BEG
0000 43 BRW FOR$DECODE_MO+2
0000 44
0000 45 This puts the correct mask in entry vector, that is FOR$$IO_BEG entry mask.
0000 46 Furthermore this module must only use R0 and R1
0000 47 since any other register might not be in the entry mask for FOR$$IO_BEG.
0000 48
0000 49 ENVIRONMENT: User access mode; mixture of AST level or not
0000 50
0000 51 AUTHOR: Richard B. Grove, CREATION DATE: 28-May-78
0000 52
0000 53 MODIFIED BY:
0000 54 T. Hastings, 29-July-78
```



```
0000 56      .SBTTL HISTORY          ; Detailed Current Edit History
0000 57
0000 58
0000 59 : Edit History for Version 1
0000 60 :
0000 61 : 0-10 - Add comment about vectors. TNH 23-June-78
0000 62 : 0-12 - Pass arg in R0, not R0R, add comments. TNH 29-July-78
0000 63 : 1-001 - Update version number and copyright notice. JBS 16-NOV-78
0000 64 : 1-002 - Change statement type symbols to be LUB$K... JBS 07-DEC-78
0000 65 : 1-003 - Change statement type symbols to be ISB$K... JBS 11-DEC-78
0000 66 : 1-004 - Add " " to the PSECT directive. JBS 22-DEC-78
0000 67 : 1-005 - Add FOR$READ_KF, FOR$READ_KO, FOR$REWRITE_SF, FOR$REWRITE_SO,
0000 68 : FOR$READ_IF, FOR$READ_IO, FOR$WRITE_IF, FOR$WRITE_IO,
0000 69 : FOR$READ_KU, FOR$REWRITE_SU,
0000 70 : SBL 2-May-1979
0000 71 : 1-006 - Remove all entry points that need object time formatting,
0000 72 : putting them in FOR$ENTRY_OBJ so that we can arrange to
0000 73 : load the format compiler only when it is needed.
0000 74 : JBS 26-JUN-1979
0000 75 : 1-007 - Remove entry point FOR$ENCODE_MF; we will code a new module
0000 76 : for it and FOR$$IO_BEG, to see how much I/O initiation time
0000 77 : improves. JBS 02-JUL-1979
0000 78 : 1-008 - Do likewise for FOR$READ_DU and FOR$WRITE_DU. JBS 03-JUL-1979
0000 79 : 1-009 - Remove all entry points and add FOR$READ_SO; each entry
0000 80 : point gets its own module so we can selectively load
0000 81 : the necessary UDF and REC modules. JBS 09-JUL-1979
0000 82 : 1-010 - New parameter format for FOR$$IO_BEG. SBL 5-Dec-1979
0000 83 : 1-011 - Change BRW FOR$$IO_BEG+2 to JMP G^FOR$$IO_BEG+2. JAW 21-Feb-1981
```



```
0000 85 .SBTTL DECLARATIONS
0000 86
0000 87 :
0000 88 : INCLUDE FILES:
0000 89 :
0000 90
0000 91 $FORPAR ; Define inter-module FORTRAN symbols
0000 92 $ISBDEF ; Define statement type symbols
0000 93
0000 94 :
0000 95 : EXTERNAL SYMBOLS:
0000 96 :
0000 97
0000 98 .DSABL GBL ; Declare all external symbols
0000 99 .EXTRN FOR$$IO_BEG ; common I/O statement processing
0000 100 :+
0000 101 : The following references are to make sure the necessary UDF and REC
0000 102 : modules are loaded. These are the routines which are called through
0000 103 : the dispatch tables in FOR$$DISPAT.
0000 104 :-
0000 105 .EXTRN FOR$$UDF_RF0, FOR$$UDF_RF1, FOR$$UDF_RF9
0000 106 .EXTRN FOR$$REC_RMF0, FOR$$REC_RMF1, FOR$$REC_RMF9
0000 107 :+
0000 108 : The following reference makes sure the format compiler is loaded.
0000 109 :-
0000 110 .EXTRN FOR$$FMT_COMPIL
0000 111
0000 112 :
0000 113 : MACROS:
0000 114 :
0000 115 : NONE
0000 116 :
0000 117 : PSECT DECLARATIONS:
0000 118 :
0000 119
0000 120 .PSECT _FOR$CODE PIC,USR,CON,REL,LCL,SHR,EXE,RD,NOWRT,LONG
0000 121
0000 122 :
0000 123 : EQUATED SYMBOLS:
0000 124 :
0000 125 :
0000 126 :
0000 127 :
0000 128 : OWN STORAGE:
0000 129 :
0000 130 : NONE
0000 131 :
```



```
0000 133      .SBTTL  FOR$DECODE_MO - DECODE OBJECT-FORMATTED
0000 134
0000 135 :++
0000 136 : FUNCTIONAL DESCRIPTION:
0000 137 :
0000 138 :     Initialize the FORTRAN I/O system to perform
0000 139 :     a DECODE OBJECT-FORMATTED I/O statement.
0000 140 :
0000 141 : CALLING SEQUENCE:
0000 142 :
0000 143 :     CALL FOR$DECODE_MO (char_cnt.rlu.v, format_adr.rt.r, usr_buf_adr.wt.ra
0000 144 :     [, err_adr.j.r [, end_adr.j.r]])
0000 145 :
0000 146 : INPUT PARAMETERS:
0000 147 :
0000 148 :     unit.rl.v           logical unit number
0000 149 :     format_adr.rt.r     format string (needs compilation)
0000 150 :     usr_buf_adr.wt.ra   adr. of user's buffer
0000 151 :     [err_adr.j.r]       optional ERR= address
0000 152 :     [end_adr.j.r]       optional END= address
0000 153 :
0000 154 : IMPLICIT INPUTS:
0000 155 :
0000 156 :     NONE except those used by FOR$$IO_BEG.
0000 157 :
0000 158 : OUTPUT PARAMETERS:
0000 159 :
0000 160 :     NONE
0000 161 :
0000 162 : IMPLICIT OUTPUTS:
0000 163 :
0000 164 :     NONE except those left by FOR$$IO_BEG.
0000 165 :
0000 166 : COMPLETION CODES:
0000 167 :
0000 168 :     NONE
0000 169 :
0000 170 : SIDE EFFECTS:
0000 171 :
0000 172 :     NONE except those of FOR$$IO_BEG.
0000 173 :
0000 174 : --
0000 175
50 010C 8F 0000' 0000 176 FOR$DECODE MO:: .MASK  FOR$$IO_BEG
0000 177      MOVZWL  #ISB$K ST TY RMF+      -
0000 178      <1@FOR$V OBJ-FMT>, R0      ; Statement type
0000 179      JMP      G^FOR$$IO_BEG+2      ; branch past call mask
000D 180
000D 181
000D 182      .END
```



FOR\$DECODE\_MO  
Symbol table

I 14  
- entry point for FORTRAN DECODE OBJECT- 15-SEP-1984 23:51:10 VAX/VMS Macro V04-00 Page 5  
6-SEP-1984 10:54:39 [FORRTL.SRC]FORDECOMO.MAR;1 (4)

```
FOR$$FMT_COMPIL      ***** X 00
FOR$$IO_BEG          ***** X 00
FOR$$REC_RMFO         ***** X 00
FOR$$REC_RMF1         ***** X 00
FOR$$REC_RMF9         ***** X 00
FOR$$UDF_RFO          ***** X 00
FOR$$UDF_RF1          ***** X 00
FOR$$UDF_RF9          ***** X 00
FOR$DECODE_MO         00000000 RG 01
FOR$V_OBJ_FMT         = 00000008
ISB$K_ST_TY_RMF       = 0000000C
```

+-----+  
! Psect synopsis !  
+-----+

PSECT name	Allocation	PSECT No.	Attributes															
ABS	00000000 ( 0.)	00 ( 0.)	NOPIC	USR	CON	ABS	LCL	NOSHR	NOEXE	NORD	NOWRT	NOVEC	BYTE					
_FOR\$CODE	0000000D ( 13.)	01 ( 1.)	PIC	USR	CON	REL	LCL	SHR	EXE	RD	NOWRT	NOVEC	LONG					

+-----+  
! Performance indicators !  
+-----+

Phase	Page faults	CPU Time	Elapsed Time
Initialization	30	00:00:00.09	00:00:00.91
Command processing	119	00:00:00.59	00:00:03.83
Pass 1	129	00:00:01.25	00:00:04.56
Symbol table sort	0	00:00:00.18	00:00:00.18
Pass 2	47	00:00:00.46	00:00:02.48
Symbol table output	3	00:00:00.02	00:00:00.02
Psect synopsis output	2	00:00:00.02	00:00:00.19
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	332	00:00:02.61	00:00:12.17

The working set limit was 1050 pages.  
6710 bytes (14 pages) of virtual memory were used to buffer the intermediate code.  
There were 20 pages of symbol table space allocated to hold 188 non-local and 0 local symbols.  
182 source lines were read in Pass 1, producing 8 object records in Pass 2.  
9 pages of virtual memory were used to define 2 macros.

+-----+  
! Macro library statistics !  
+-----+

Macro library name	Macros defined
_\$255\$DUA28:[FORRTL.OBJ]FORRTL.MLB;1	2
-\$255\$DUA28:[SYSLIB]STARLET.MLB;2	0
TOTALS (all libraries)	2

183 GETS were required to define 2 macros.

There were no errors, warnings or information messages.



FOR\$DECODE MO J 14  
VAX-11 Macro Run Statistics - entry point for FORTRAN DECODE OBJECT- 15-SEP-1984 23:51:10 VAX/VMS Macro V04-00 Page 6  
6-SEP-1984 10:54:39 [FORRTL.SRC]FORDECOMO.MAR;1 (4)  
MACRO/ENABLE=SUPPRESSION/DISABLE=(GLOBAL,TRACEBACK)/LIS=LISS:FORDECOMO/OBJ=OBJ\$:FORDECOMO MSRC\$:FORDECOMO/UPDATE=(ENH\$:FORDECOMO)+LI



0179 AH-BT13A-SE  
VAX/VMS V4.0

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LIS

FORDATE  
LIS

FORCLOSE  
LIS

FORDECOMP  
LIS

FORDELETE  
LIS

COMRAD50  
LIS

COMUSEREX  
LIS

FORBITOPS  
LIS

FORDEFINE  
LIS

FORBACKSP  
LIS

FORDISPA  
LIS

FORCUTR  
LIS